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EPIDEMICS OF CATARRHAL OPHTHALMIA IN MACEDONIA, 1946-47, AND IN EAST SERBIA, 1948

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In professional periodicals we often find descriptions of epidemics, but ophthalmopathic epidemics are hardly ever mentioned, although these epidemics can attain considerable dimensions and have a far-reaching, although transient, adverse effect on the national economy. One such epidemic of catarrhal ophthalmia will be described here; its epidemicity, extent, and duration make it worthy of note.

In June 1946, an explosive epidemic of catarrhal ophthalmia broke out suddenly in all the districts in the upper course of the Vardar River. It was especially severe in Skoplje, Kumanovo, Titov Veles, and the suburbs of these towns. The epidemic continued to spread and became more severe. The number of incidences and pandemicity reached its culmination at the end of the year. The onset and symptoms resembled those of gonorrheal ophthalmia. The afflicted areas included Kosmet, Tetovo and Bitolj, the valley of the Crna River, thence to Resah and Prilep, and in the end almost all of Macedonia. The epidemic began to subside from the beginning of autumn and decreased noticeably during the winter.

At the end of winter it had practically ceased; isolated cases appeared sporadically with much weaker symptoms. The characteristics of ophthalmia were completely absent, and the remaining cases indicated symptoms of ordinary catarrhal inflammation. This lasted through spring, but with the first dry, warm summer days of 1947 the disease flared up again to epidemic proportions with the same symptoms and severity as in the previous year. However, the extent of the inflammation and irritation was far less and the epidemic affected fewer areas. The second epidemic had a much faster diminution, completely disappeared with the first days of fall, and has failed to appear since.

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An epidemic on a much smaller scale, but with the same severity and the same sypmtoms of severe inflammation and irritation, broke out in Nis, Leskovac, and Vranje in 1948. It was not restricted to these places alone and spread far into their neighboring areas. This epidemic mainly attacked children up to 2 years old, but was less severe among older children and some few adults.

The sudden and very acute onset is characteristic of this disease. An acute infiltration of the conjunctiva develops which soon becomes edematous and this is followed by hemorrhage and a very copious purulent discharge and in many cases there is an acute hematosis of the conjunctiva and exophthalmos.

The appearance of this ophthalmia in small children is characterized by the puffiness and paleness of the face. The eyelids and the surrounding area are swollen and often livid. The cornea is infiltrated and a copious mucopurulent discharge of a whitish color flows from it. In many cases blood clots appear on the conjunctiva. The eyelids open actively with great difficulty, and in passive opening a copious purulent discharge mixed with tears is evidenced. The conjunctiva is completely swollen and often indicates blood spots. The conjunctiva seems to cover the entire length of the limbus cornea. The cornea is transparent, smooth, and indicates no epithelial lesion. Surface infiltrate is rare and there was not a single case of ulceration. In some cases a stimulus finds its way into the orbital tissue and causes a mild keratoconus and cellulitis, but never purulence. There are no changes in the other parts of the eye. In children the body temperature usually indicates a general rise.

Course of the Disease

Ophthalmia of both eyes simultaneously is rare. Usually one eye is initially affected and then the other eye after 2 or 3 days. Sometimes the eye which was initially affected is soon cured and then the other eye is affected.

The symptoms reach their peak in the course of the first 2 days, then gradually decrease in severity. Next the swelling subsides and the infiltration slowly disappears even in some severe cases. Finally, all the symptoms of irritation and inflammation disappear. Recovery is usually complete after one week. We wish to stress the fact that this course generally occurred only in those cases with positive pneumococcic infection. A much faster cure can be obtained by using penicillin.

All the cases which were treated and kept under our surveillance completely recovered without complications of the ocular membrane or the ocular strata, and also without impairment of vision. We were unable to maintain an account of those whom we did not treat, but judging by the very small number of cases returning after a month for a new examination with all the signs of chronic conjunctivitis, it may be concluded that most of these cases completely recovered following the usual period of infection.

Source

For technical reasons, especially in Macedonia, it was very difficult to determine the source of the disease in all cases.

In the vast majority of cases the causative agent was found to be pneumococcus. This was also true in all the cases which Dr Stamenkovic examined in Bitolj during the recent epidemic in that area. On the other hand, Koh-Vikov bacillus was not found in the cases in Macedonia, whereas it was in Serbia. This could have been a technical error, for the onset and course of the disease were indicative of infection by the Koh-Vikov bacillus and this was confirmed recently by tests on identical cases in Serbia.

We stress that gonoccocus was found in no case.

Therapy

We treated all the ambulatory cases with penicillin solution, 100,000 units in 20 cubic centimeters of distilled water, one minim every 2 hours. In most cases, and especially those infected by pneumococcus, the healing was rapid; inhibition of the morbid process was evident on the second day. In some cases the morbid process during the first day was rapid and acute. From this point of view one case was of especial interest.

This case was a child with an acute ophthalmia of the left eye with all the symptoms of acute gonorrheal ophthalmia, with the exception of the cornea. There was a pronounced purulent discharge, high temperature, exophthalmos, etc. The child was brought in at 1500 hours. Immediately after obtaining specimen of the discharge for bacteriological examination, penicillin treatment was undertaken -- drops were instilled, three times in all -- at 1500,1700, and 1900 hours. A noticeable decrease of all symptoms was observed after the third instillation. The child was hospitalized and slept, and in the morning almost all the symptoms had disappeared. By the following afternoon there was only a slight infiltration of the conjunctiva. Pneumoccoccus was found in the purulent specimen.

There were, however, cases which did not react as rapidly and effectively to the penicillin. Recovery was slower and took much longer time -- more than 3 and sometimes as long as 7 days. This was the case when preparations other than penicillin were used. This caused us to suspect that Kik-Vikov bacillus was responsible for the epidemic, but unfortunately we could not confirm this bacteriologically. At the very end of the epidemic, we succeeded in determining this bacillus and our suspicions were thus confirmed.

We do not know whether an epidemic caused by the Kih-Vikov bacillus has been previously recorded in our country. This epidemic appears frequently in countries with a warm dry climate, such as the northern coast of Africa and especially Egypt. In 1946 and 1947, the climate in our southern districts was similar; both summers were very dry, exceptionally warm, with strong solar radiation and much dust. This was especially so in 1946 from the very first days of spring. On the strength of the above findings, it is easy to explain the appearance of this epidemic in July 1946, its culmination before the beginning of autumn, its inhibition through autumn and winter, its reappearance at the beginning of the summer of 1947, and its rapid decrease and complete disappearance in the fall of 1947. It then spread to the southern districts of Serbia, where in 1948 it spread northward, became widely spread, but decreased rapidly and disappeared in the fall of 1948. The epidemic was obviously ophthalmia caused by pneumoccocci and Koh-Vikov bacilli, both causative agents producing almost identical symptoms, severity, and prognoses. All the cases showed no complications (with the exception of slight infiltrations of the corneal epithelium) and no after effects. The differences are in the course of the illness, in the response to penicillin therapy, and in the duration of the infection. The difference was especially evident in the prognosis, crisis or lysis.

In conclusion, there is no likelihood of this epidemic extending to the north as was the case with pappataci fever.

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